



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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D407-667-205
Job Sheet 192361



Part No: D407-667-205

Job Qty: 1 ea

Part Name: Aft Crosstube - High 407



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 3/21/19

Job Tracking No:

Due Date: 4/18/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV G IPP Rev:C 05.09.02 Add holes for comp. w/ Bell Skids KJ/JLM IPP Rev:D Add Magnobond,Rubber Cushion,Clamps 07-02-19 JLM IPP Rev:E 08-05-22 add comment seq. 6 & QC15 & QC5 DD verf:EC IPP Rev:F 08-06-12 add comment seq. 24 DD verf:EC IPP Rev:G 08-08-19 revE per dwg DD verf:EC IPP Rev H 09.01.06 ECN 08-562 EC verf:DD IPP Rev:I 10.04.07 revise route seq. in bom DD verf:JLM IPP Rev J 11.04.26 removed abrasion strip echn 11-551 EC verf:DD IPP REV:K 11.10.03 DEOD407-667-245-F-2 DD verf:EC

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard Setup Hrs	Run Hrs	Workcenter/Supplier	Workcenter / Supplier Lead Time	Sign-off
110	Packaging 1 - Pick Kit	1 pcs		4/18/19	0.00	0.00	Packaging 1 - 1		
							Packaging 1 - 2		
							Packaging 1 - 3		
							Packaging 1 - 4		
							Packaging 1 - 5		
							Packaging 1 - 6		
							Packaging 1 - 7		
							Packaging 1 - 8		
							Packaging 1 - 9		
							Packaging 1 - 10		
							Packaging 1 - 11		
							Packaging 1 - 12		
							Packaging 1 - 13		
							Packaging 1 - 14		
							Packaging 1 - 15		
							Packaging 1 - 16		
							Packaging 1 - 17		
							Packaging 1 - 18		
							Packaging 1 - 19		
							Packaging 1 - 20		
							Packaging 1 - 21		
							Packaging 1 - 22		
							Packaging 1 - 23		
							Packaging 1 - 24	EO 19-04-25	
							Packaging 1 - 25		
							Packaging 1 - 26		
							Packaging 1 - 27		

ART

EROSPACE

er No: S175224



07 - 667 - 205

192361

o/ Batch: S175224

Dart Aerospace Ltd.

1270 Aberdeen Street

Hawkesbury, ON K84 1K7

CANADA

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es: TC STC SH01-5 Issue 3

FAA STC SR01304NY 05/12/15, JCAB JAI



Container No: S175224



Part: D407-667-205

Job No: 192361

Serial No/Batch: S175224

Revision:

Inspector:

Exp Date:

Instructions: TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAI

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P.T.O.

NRC:

19-7266

D407-667-205/192361/S175224

				Packaging 1 - 28	
				Packaging 1 - 29	
				Packaging 1 - 30	
				Packaging 1 - 31	
				Packaging 1 - 32	
				Packaging 1 - 33	
				Packaging 1 - 34	
				Packaging 1 - 35	
				Packaging 1 - 36	
120 Skidtubes - Bend - 2 - B4B	1 pcs	4/18/19	1.99 3.33	Skidtubes - Bend - B4B	GP 19-04-25
130 QC 15	1 pcs	4/18/19	0.00 0.00	QC 15 - 12	
				QC 15 - 3	
				QC 15 - 47	
				QC 15 - 49	
				QC 15 - 58	
				QC 15 - 9	DAS APR 26 2019 68 9-89
140 Crosstubes - 2 - B4B	1 pcs	4/18/19	0.00 3.47	Crosstubes - 1 - B4B	
				Crosstubes - 2 - B4B	GP 19-04-30
				Crosstubes - 3 - B4B	
				Crosstubes - 4 - B4B	
150 Crosstubes - 3 - B4B	1 pcs	4/18/19	0.00 0.91	Crosstubes - 1 - B4B	
				Crosstubes - 2 - B4B	
				Crosstubes - 3 - B4B	GP 19-05-01
				Crosstubes - 4 - B4B	
160 QC 7	1 pcs	4/18/19	0.00 0.00	QC 7 - 10	
				QC 7 - 13	
				QC 7 - 14	
				QC 7 - 15	
				QC 7 - 17	
				QC 7 - 18	
				QC 7 - 19	
				QC 7 - 2	
				QC 7 - 28	
				QC 7 - 3	
				QC 7 - 30	
				QC 7 - 34	
				QC 7 - 36	
				QC 7 - 37	
				QC 7 - 41	
				QC 7 - 47	
				QC 7 - 48	
				QC 7 - 51	
				QC 7 - 58	
				QC 7 - 59	
				QC 7 - 60	
				QC 7 - 9	
				QC 7 - 68	DAS MAY 03 2019 68 9-89
				QC 7 - 50	
				QC 7 - 67	
				QC 7 - 40	
				QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
170 QC 5	1 pcs	4/18/19	0.00 0.00		

3/21/2019

[Dart Hawkesbury] Job Sheet - Lajeunesse, Marie

				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	DAS MAY 03 2019 68
				QC 5 - 9	9-89
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	
180 Outsource - 2 - NDT per QSI038	1 pcs	4/18/19		SKY002-VC	2 2019-05-07
190 Packaging 2-1 - Receive - B4B	1 pcs	4/18/19	0.00 0.00	Packaging 2 - 1 - B4B	
				Packaging 2 - 2 - B4B	
				Packaging 2 - 3 - B4B	
				Packaging 2 - 5 - B4B	
				Packaging 2 - 4 - B4B	
				Packaging 2 - 6 - B4B	
				Packaging 2 - 7 - B4B	
				Packaging 2 - 8 - B4B	
				Packaging 2 - 9 - B4B	
				Packaging 2 - 10 - B4B	
				Packaging 2 - 11 - B4B	
				Packaging 2 - 12 - B4B	
				Packaging 2 - 13 - B4B	
				Packaging 2 - 14 - B4B	
				Packaging 2 - 15 - B4B	
				Packaging 2 - 16 - B4B	
				Packaging 2 - 17 - B4B	
				Packaging 2 - 18 - B4B	
				Packaging 2 - 19 - B4B	
				Packaging 2 - 20 - B4B	
				Packaging 2 - 21 - B4B	
				Packaging 2 - 22 - B4B	
				Packaging 2 - 23 - B4B	
				Packaging 2 - 24 - B4B	
				Packaging 2 - 25 - B4B	
				Packaging 2 - 26 - B4B	
				Packaging 2 - 27 - B4B	
				Packaging 2 - 28 - B4B	
				Packaging 2 - 29 - B4B	
				Packaging 2 - 30 - B4B	
				Packaging 2 - 31 - B4B	
				Packaging 2 - 32 - B4B	
				Packaging 2 - 33 - B4B	
				Packaging 2 - 34 - B4B	
				Packaging 2 - 35 - B4B	
				Packaging 2 - 36 - B4B	
200 QC 6	1 pcs	4/18/19	0.00 0.00	QC 6 - 9	DAS
				QC 6 - 68	MAY 08 2019 68
				QC 6 - 61	9-89
210 Spray Paint - 2 - B4B	1 pcs	4/18/19	0.00 1.39	Spray Paint - 1 - B4B	2017-5-6
				Spray Paint - 2 - B4B	
				Spray Paint - 3 - B4B	
				Spray Paint - 4 - B4B	
220 QC 14	1 pcs	4/18/19	0.00 0.00	QC 14 - 15	
				QC 14 - 2	
				QC 14 - 34	
				QC 14 - 41	
				QC 14 - 51	

Plex 3/21/19 1:43 PM Dart.lajeunesse.marie

ps://www.plexonline.com/b52ec1fa-d4bd-47aa-8ba4-677e57efcba0/Plexus_Control/Report_View_2.asp?URL=../Part/Job_Sheet.asp&Report=Tru... 3/6

					QC 14 - 58	
					QC 14 - 59	
					QC 14 - 9	DAS
					QC 14 - 68	MAY 08 2019 68
					QC 14 - 40	9-89
					QC 14 - 19	
230 Crosstubes - 4 - B4B	1 pcs	4/18/19	0.00 3.47		Crosstubes - 1 - B4B	20 19-5-7
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
240 QC 5	1 pcs	4/18/19	0.00 0.00		QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	DAS
					QC 5 - 68	MAY 15 2019 68
					QC 5 - 9	9-89
					QC 5 - 50	
					QC 5 - 30	
250 Packaging 1-1 - Pick Kit - B4B	1 pcs	4/18/19	0.00 0.00		Packaging 1 - 1 - B4B	
					Packaging 1 - 2 - B4B	
					Packaging 1 - 3 - B4B	
					Packaging 1 - 4 - B4B	MAY 16 2019
					Packaging 1 - 5 - B4B	
					Packaging 1 - 6 - B4B	
					Packaging 1 - 7 - B4B	
					Packaging 1 - 8 - B4B	
					Packaging 1 - 9 - B4B	
					Packaging 1 - 10 - B4B	
					Packaging 1 - 11 - B4B	
					Packaging 1 - 12 - B4B	
					Packaging 1 - 13 - B4B	
					Packaging 1 - 14 - B4B	
					Packaging 1 - 15 - B4B	
					Packaging 1 - 16 - B4B	
					Packaging 1 - 17 - B4B	
					Packaging 1 - 18 - B4B	
					Packaging 1 - 19 - B4B	
					Packaging 1 - 20 - B4B	
					Packaging 1 - 21 - B4B	
					Packaging 1 - 22 - B4B	
					Packaging 1 - 23 - B4B	
					Packaging 1 - 24 - B4B	
					Packaging 1 - 25 - B4B	
					Packaging 1 - 26 - B4B	
					Packaging 1 - 27 - B4B	
					Packaging 1 - 28 - B4B	
					Packaging 1 - 29 - B4B	
					Packaging 1 - 30 - B4B	
					Packaging 1 - 31 - B4B	
					Packaging 1 - 32 - B4B	

260 QC 4	1 pcs	4/18/19	0.00 0.00	Packaging 1 - 33 - B4B	
				Packaging 1 - 34 - B4B	
				Packaging 1 - 35 - B4B	
				Packaging 1 - 36	
				QC 4 - 28	
				QC 4 - 58	DAS MAY 2 3 2019
				QC 4 - 69	58
				QC 4 - 9	9-89
				QC 4 - 46	
270 Packaging 3-1 - Stock - B4B	1 pcs	4/18/19	0.00 0.00	Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	DAS MAY 2 3 2019
				Packaging 3 - 9 - B4B	58
				Packaging 3 - 10 - B4B	9-89
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
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				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	DAS
				Packaging 3 - 36 - B4B	21
275 DC - 1 - B4B	1 pcs	4/18/19	0.00 0.00	DC - 1 - B4B	9-89 MAY 2 4 2019
				DC - 2 - B4B	
280 QC21-FG	1 Ea	4/18/19	0.00 0.00	QC21	DAS MAY 2 4 2019
Part Op 110 - (Pick Kit)					
Descriptions: 120 - (CNC Delta 100 Bender) 1-Bend tube as per Dwg D407-667-245 using CNC bender program 407 Aft and Folio 21					
130 - (QC15- Crosstube Dimensional Check)					
140 - (Crosstubes) ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED					
BY: ***** 1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill all (3)					
top holes. Holes facing Inboard. Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg					
D407-667-245 2- Drill fwd rivet holes using drill Jig DT8787 fwd as per Dwg D407-667-245. Note: FWD side has 3X top					
holes facing inboard. 3- C'sink holes as per dwg D407-667-245. Allow rivet to sit below surface to compensate for paint.					
4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. Drill ONLY 2					
top holes ONLY plug most bottom hole to prevent accidental drilling. Drill holes and ream using drill Jig DT8583 &					
DT8584 as per Dwg D407-667-245. Drill only the top (2) holes. Drill & ream the top (2) holes to finish size using drill Jig					
DT8583 & DT8584 as per Dwg D407-667-245 5-Drill aft rivet holes using drill Jig DT8787 aft as per Dwg D407-667-245.					
Drill only the top (2) holes. 6- C'sink holes as per dwg D407-667-245. Allow rivet to sit below surface to compensate for					

10

paint. 8-*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***Debur & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-245

150 - (Crosstubes Chemical Conversion) ***IMMEDIATELY AFTER GRINDING***

160 - (QC7-Inspect Chemical Conversion Coat)

170 - (QC5- Inspect part completeness to step on W/O)

180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 0380

190 - (Receive & Inspect for Damage & Mat'l Certs) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

200 - (QC6- All purchased or subcontracted products) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

210 - (Spray Paint / NDT Room) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Prime inside and outside crosstube as per DEO D407-667-245 and QSI 005 4.2 ***Mask underside of crosstube as shown*** 3- Apply clear coat as per dwg Clear Coat Batch: 5151467 Primer 5143304 Paint 5173197

220 - (QC14- Inspect Spray Paint) Then,Wrap in plastic bag to protect from scratches

230 - (Crosstubes) 1- Install chaffing shield as per D407-667-245 using DT10096 to establish 8.90 dimension.Top holes should be facing up. ****Ensure chaffing is to be position "overlap" AFT**** A/R Proseal 890 Batch: 5142124
EXP: 19/10 2- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 3-Install support with Scotch-Weld DP460 and install clamps as per Dwg D407-667-245 using installation jig DT9025. Torque clampsas per dwg A/R Scotch-Weld DP460 Batch: 5132100
EXP: 20/11 ***LET CURE FOR 24 HOURS*** CURE TIME: START: 19/5/17

FINISH: 19/5/18 4-Install nut plates as per Dwg D407-667-245. Touch-up rivet heads with Imron paint.

240 - (QC5- Inspect part completeness to step on W/O) ***RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURE FOR 24HOURS AS PER DWG DEO***

250 - (Pick Kit)

260 - (QC4- 100% Inspect kits for completeness)

270 - (Identify as per dwg & Stock Location:) Identify and in kanban rack

275 - (Document Control) Photocopy bluefile and create labels as per PPP D407-667-205 CHG009

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D407-667-205TRN	Crosstube Turning Detail	1 pcs (1 ea)	110-Packaging 1 - Pick Kit	5171700
D2873-043	Nut Plate Assembly	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
D2873-045	Nut Plate Assembly	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D2894-1	2.75 Support	1 pcs (1 ea)	230-Crosstubes - 4 - B4B	
D3190-1	Chaffing Shield	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D3595-063-430	Rubber Cushion 0.63" Wide X 4.30" Long	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
MS20601-AD4W8	Rivet	14 Ea (14 ea)	230-Crosstubes - 4 - B4B	
MS21920-22	Clamp	4 Ea (4 ea)	230-Crosstubes - 4 - B4B	
MS21920-25	Clamp	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
NAS1149D0563J	Washer	18 Ea (18 ea)	230-Crosstubes - 4 - B4B	5174288
AN5-10A	Bolt	10 Ea (10 ea)	250-Packaging 1-1 - Pick Kit - B4B	5158586
AN5-32A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5058983
AN5-34A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5019410
MS21042L5	Nut	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5167653

Job Allocations

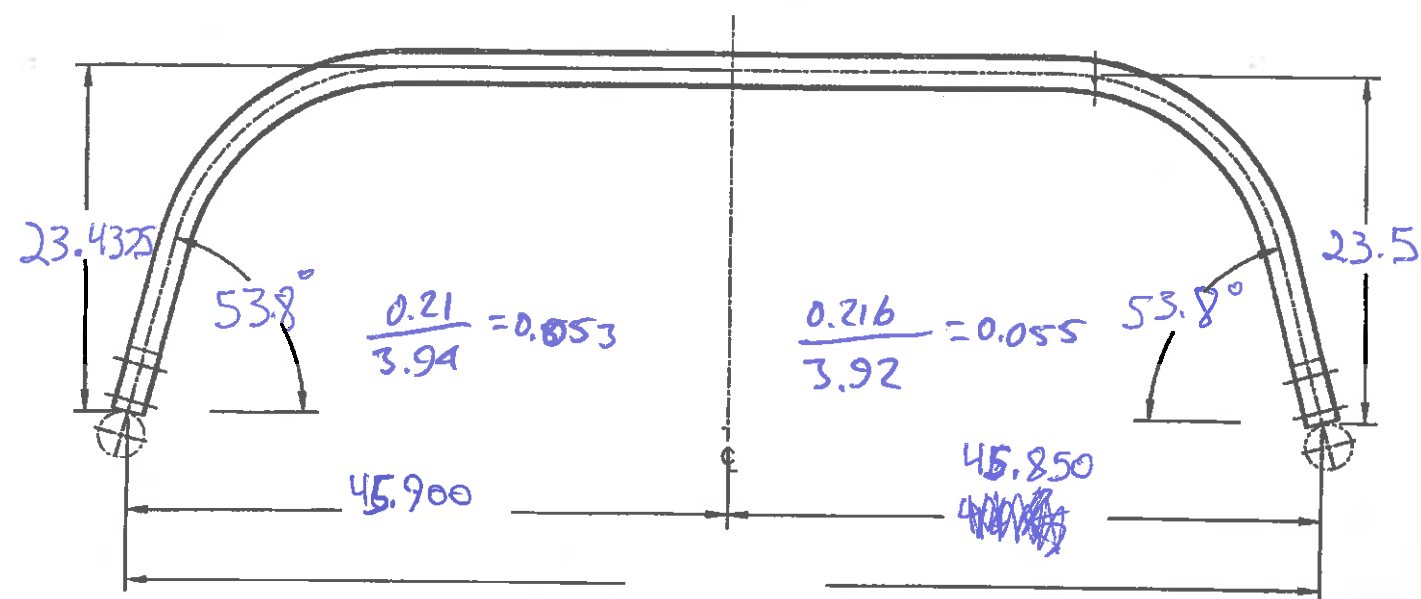
Operation	Component Part	Required	Inventory	Allocated
110-Packaging 1 - Pick Kit 230-Crosstubes - 4 - B4B	D407-667-205TRN	1	2	0
	D2873-043 5145879	2	75	0
	D2873-045 5159206	2	42	0
	D2894-1 5064586	1	2	0
	D3190-1 5133918	2	53	0
	D3595-063-430 5274227	2	24	0
	MS20601-AD4W8 5103817	14	182	0
	MS21920-22 5155978	4	41	0
	MS21920-25 5173047	2	139	0
	NAS1149D0563J	18	1,477	0
250-Packaging 1-1 - Pick Kit - B4B	AN5-10A	10	340	0
	AN5-32A	4	385	0
	AN5-34A	4	39	0
	MS21042L5	4	701	0

Part Specifications

Specifications could not be found.

DART AEROSPACE LTD		Work Order:	192361
Description: Crosstube High Aft (407)		Part Number:	D407-667-205
Inspection Dwg: D407-667-245	Rev: G	Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	45.79	46.05
Angle	54	56
Total Span	91.58	92.100
Bending Passes	6	--
Crushing	--	6%



	Side A	Side B
Bending Passes		
Crushing	5.3%	5.5%
Comments		

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.22	Dwg Rev updated	KJ	
C	11.08.22	Dimensions updated	KJ	
D	11.09.30	Dimensions updated	KJ	
E	12.04.16	Added bending, crushing dimensions	KJ	
F	15.05.14	Dwg Rev updated	KJ	

Item	QTY	PART NUMBER	DESCRIPTION
	-246		
	X	D407-887-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
1	1	D8011-115	CROSSTUBE
2	2	D2873-043	NUT PLATE
3	2	D2873-045	NUT PLATE
4	1	D2894-1	SUPPORT
5	2	D3180-1	CHAFING SHIELD
6	2	D3586-083-430	RUBBER CUSHION
7	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
8	4	MS21920-22	CLAMP
9	2	MS21920-25	CLAMP (OR MS21920-24)
10	AR	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD
11	AR	PROSEAL 880	SEALANT

GENERAL NOTES:

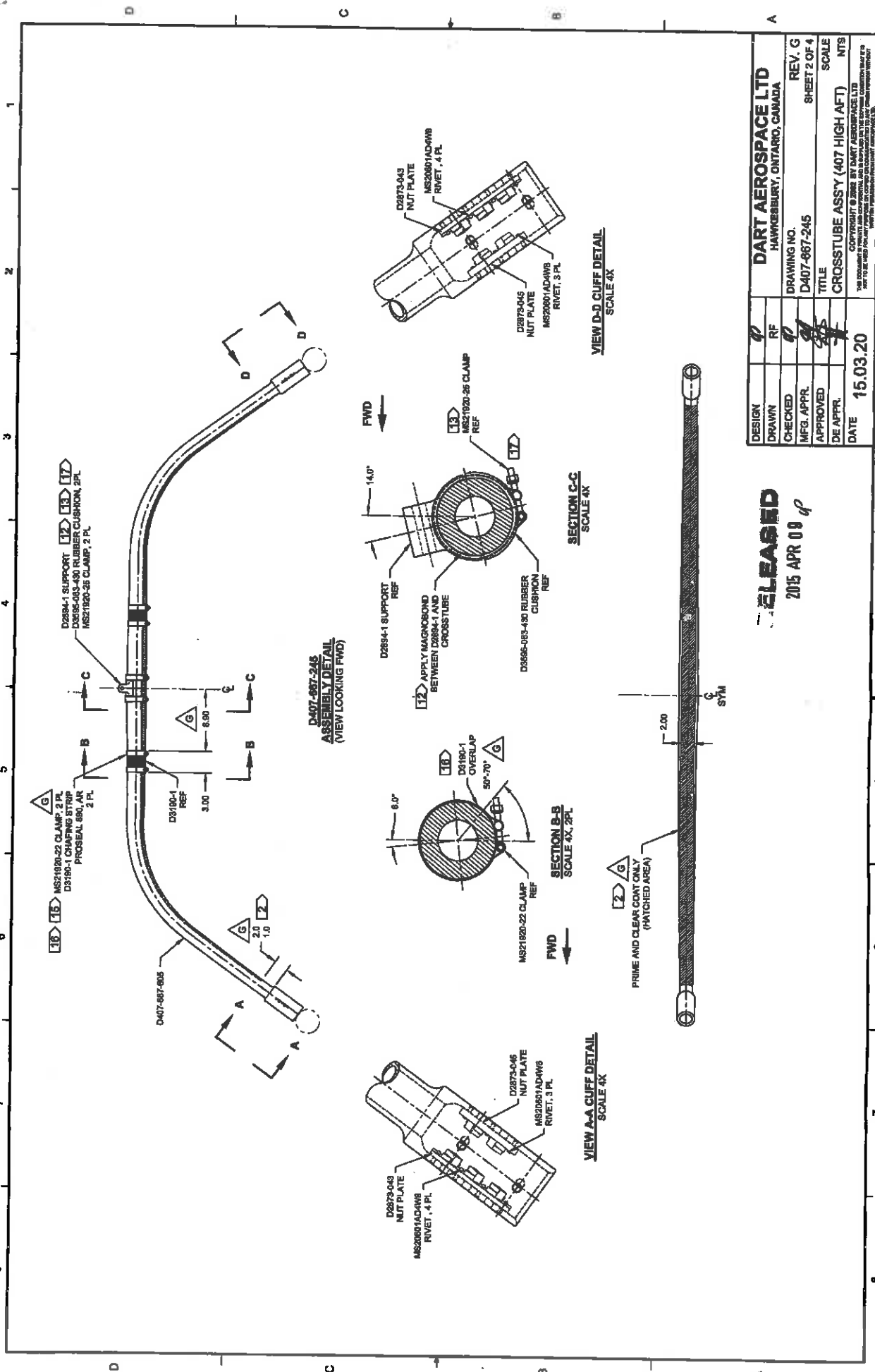
- 1) MATERIAL: MANUFACTURED FROM D8011-115
FINISHED LENGTH = 112.51±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT CROSSTUBE PER DART QSI 005 4.2
FOR HATCHED AREAS (ZN A6-2), MASK AS REQUIRED
TO APPLY PRIME AND APPLY CLEAR COAT ONLY
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-887-245" AND BATCH NUMBER ON INSIDE OF CLIFF USING VIBRATING STYLUS.
- 7) WEIGHT: 27.7 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN-OFF PART: BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS WITH D3586-083-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) APPLY A THIN COAT OF PROSEAL 880 ON INSIDE CONCAVE SURFACE OF D3180-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL OF PROSEAL 880 ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 880 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- 16) INSTALL D3180-1 CHAFING SHIELDS SO THAT OVERLAP IS 50 TO 70 DEGREES FROM BOTTOM OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. TORQUE CLAMPS ON D3180-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

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SUBJECT TO AMEND
WITHOUT NOTICE
WORK ORDER
NO. 142361
1905-21

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2015 APR 09
2015 15:57

G	INCORP. DEC'D D407-887-245-F1/F2 (ZN DB-1, AB-1, DS-2, BS-2, CS-2); 8.50 WAS 8.53 (ZN DS-2); TORQUE REDUCED FOR CHAFING SHIELD (ZN AB-1); FINISH REVISED TO ALLOW MANUFAC. FLEXIBILITY (ZN CS-1)	RF	15.03.20
F	REFORMAT NOTES TO NEW STANDARDS (ZN BS-1); RELOCATED FLAG # 6 (ZN AB-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN CS-3, CA-3 & D2-3)	RF	08.11.08
E	8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN DS-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PARKUS-21 AND ECHN1225	MB	06.07.24
D	ADD VIEW FOR OEM SKID HOLES. ROTATE ORIENTATION OF CLAMPS SECTION F-F. REMOVE -851 ABRASION STRIP. ADD MAGNABOND 6989. ADD CUSHION	PH	07.02.07
C	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	06.07.28
B	ADD CHAFING SHIELD	CP	03.06.21
A	NEW ISSUE	CP	02.06.13
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	15.03.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. D407-887-245			
TITLE CROSSTUBE ASSY (407 HIGH AFT)			
REV. G			
SHEET 1 OF 4			
SCALE			
NTS			
THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE MANUFACTURE OF THE PARTS AND ASSEMBLIES SPECIFIED THEREIN. IT IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.			





Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB043372



Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

Attention: Jenne, Heather

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB043372

PO Date: 5/3/19

Due Date: 5/7/19

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Phone:

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	187116	D4883-7	End Fitting : Various STC's Outsource process - NDT per QSI038 4.1 Issue P/O: LPI Per ASTM 1417 LEVEL 2 Certificate of conformaty is required.	Firmed	-	5/7/19	6 pcs	0 pcs	6 pcs	\$18.50/pcs	\$111.00
2	187764	D4884-3	End Fitting, Eye : Various STC's Outsource process - NDT per QSI038 4.1	Firmed	-	5/7/19	6 pcs	0 pcs	6 pcs	\$18.50/pcs	\$111.00
3	182351	D407-667-105	Fwd Crosstube - High 407 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** OUTSIDE SERVICE -CROSSTUBES Liquid Penetrant Inspection as per QSI 038 Or Level 2 Attach copy of NDT results to work order	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
186544			IX MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
186545			IX MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
186546			IX MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
Sub Total:							4	0	4		\$444.00



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Hawkesbury, ON
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PURCHASE ORDER
POHB043372



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
4	194162	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA-316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194167		1 X MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194161		1 X MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194164		1 X MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
Sub Total:							4	0	4		\$444.00
5	192361	D407-667-205	Aft Crosstube - High 407 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038O	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194110		1 X MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194111		1 X MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
Sub Total:							3	0	3		\$333.00
Grand Total:										\$1,443.00	



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PURCHASE ORDER
POHB043372



Order Notes

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A022 Apical Processing

A024 process certifications

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 5/7/19 10:43 AM Dart.Guerin.Kimberley

		Work Order Traveler Sky Service F.B.O. Inc.		TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385	
10105 Ryan Avenue, Dorval, Quebec, H9P 1A2					
WO #:	MWO40272	Customer:	Dart Aerospace Ltd.	Dept:	NDT YUL
Descr:		PN:		S/N:	
Make:		Model:		Reg:	
TSN:		CSN:		TSO:	
Task: UNSCHEDULED					Sequence: 1
Reference: POHB043372 ✓					
Qty: 1					
A/C S/N:					

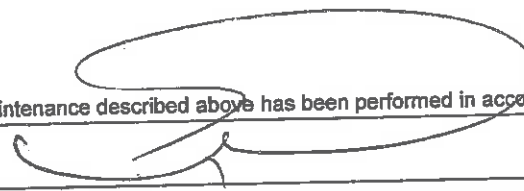
Work Required:

CARRY OUT NDT ON:

- ✓ 4 FWD CROSSTUBES, P/N# D407-667-105, J/S# 192351, 186544, 186545, 186546
- ✓ 4 FWD CROSSTUBES, P/N# D212-664-101, J/S# 194161, 194162, 194164, 194167
- ✓ 3 AFT CROSSTUBES, P/N# D407-667-205, J/S# 194110, 192361, 194111
- ✓ 6 END FITTINGS, P/N# D4883-7, J/S# 187116
- ✓ 6 END FITTING EYE, P/N# D4884-3, J/S# 187764

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-16						MAY 03 2019	 DOT-APP 20 53-89
NO CRACK FOUND							
PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923, DEV. MPO11715, UV LIGHT M-20142							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		ACA/SCA Stamp DOT-APP 20 53-89	Date: MAY 03 2019
Name:			

Entered: md
Jul 9, 2019
Date: 19-7266



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only ☐

NCR No. 19-7266

Job: 192361
Part No. D407-667-205

DISPOSITION
Rework ☒
Scrap ☐
Use-as-is ☐

Skid-tube ☐
Machining ☐
Large Fab ☐
Cross tube ☐
Small Fab ☐
Finishing ☒

Eng. (Non-AW) ☐
Prod. Eng. Coord. ☐
Rec/Store/Packaging ☐

Engineering ☐
Water Jet ☐
Supplier ☐
Quality ☐

Date: MAY 10 2019 Sequence #: 230-CROSS TUBES-4-B4B QTY Affected: 1

MRB (QS1042)
19-05-10

Description Work Order Deviation

Disposition

- CHAFING SHIELDS INSTALLED IN WRONG LOCATION.

- REMOVE CHAFING SHIELDS, PROSEAL.
- RE-INSTALL CHAFING SHIELDS AS PER WORK ORDER INSTRUCTIONS.
New Proseal batch 5146134 exp 19/10
72 hrs curing time starting 19/5/13 Finish 19/5/16

Completed By [Signature]
Lead hand / Supervisor Jean Luc Mervel
19-07-05

QC / QA Coordinator
DAS 55
9-89
July 5, 2019

Root Cause

Operator ☒
Manufacturing Process ☐
Equip/Tooling ☐
Handling/Preservation ☐
Material ☐
Product Improvement ☐
Process Improvement ☐
Human Factors ☐

FAULT CATEGORY

Pressure/Forced ☐
Bending ☐
Crushing ☐
Cracks ☐
Crimp/Kink/Ripple/Wave/Twist ☐
Marks/Chatter ☐
Mislabeled ☐
Other/Details: ☐
Contamination ☐
Misaligned/off center ☐
BOM/Route ☒
Broken/Damage/Defect ☐
Incomplete/Unclear Instructions ☐
Drill Holes ☐
Fit/Function ☐

Power Loss/Surge ☐
Folio/Program ☐
Grain Direction ☐
Weld ☐
Wrong Stock Pulled ☐
Out of Sequence ☐
Off-set/Set-up ☐

Positioned Wrong ☐
Outside Tolerance ☐
Drawing ☐
Finish ☐
Part Lost/Missing ☐
Misread ☐

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
		X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
			X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
				X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
					X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
						X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1	1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2		1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3			1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4				1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5					1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH-FWD
6						1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10	*2	*2	*2		*2		D2891-1	SUPPORT
11				*2			D2892-1	SUPPORT
12						*1	D2894-1	SUPPORT
13	*4	*4	*4		*4		D3595-063-395	RUBBER CUSHION
14				*4			D3595-063-450	RUBBER CUSHION
15						*2	D3595-075-430	RUBBER CUSHION
16	*4	*4	*4		*4		MS21920-20	CLAMP
17				*4		*4	MS21920-22	CLAMP
18						*2	MS21920-25	CLAMP (OR MS21920-24)
19	4	4	4		4		AN5-32A	BOLT
20				4		4	AN5-34A	BOLT
21	4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22	8	8	8	8	8	8	NAS1149C0563	WASHER (OR AN960JD516)
23						*2	D3190-1	CHAFING SHIELD
40	*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41	*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42		2					D2872-043	NUT PLATE
43		2					D2872-045	NUT PLATE
44	10		10				AN5-7A	BOLT
45		10		10	10	10	AN5-10A	BOLT
46	4	10	4		4		AN5-30A	BOLT
47				4		4	AN5-32A	BOLT
48			12				AN970-4	WASHER (OPTIONAL)
49		6					MS21042L5	NUT (OR MS21042-5)
50	10	12	10	10	10	10	NAS1149C0563	WASHER (OR AN960JD516)
60		1					D3039-3	CENTER DRILL (TOOLING, NOT INSTALLED)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/-143/-241/-243 & D407-667-145/-245
ASSEMBLIES ABOVE

Change Record

PAGE 1 OF 1

Part Number: D407-667-205

Description: CROSSTUBE INSTALLATION, 407 HIGH AFT

[illegible]